

**Abstract**

Provided are DNA sequences encoding mitogenic cyclins as well as methods for obtaining the same. Furthermore, vectors comprising said DNA sequences are described, wherein the DNA sequences are operatively linked to regulatory elements allowing expression in prokaryotic and/or eukaryotic host cells. In addition, proteins encoded by said DNA sequences, antibodies to said proteins and methods for their production are provided. Further described are diagnostic compositions comprising the aforementioned DNA sequences, vectors, proteins and antibodies. Methods for the identification of compounds being capable of activating or inhibiting the cell cycle are described as well. Furthermore, transgenic plant cells, plant tissue and plants containing the above-described DNA sequences and vectors are described as well as the use of the aforementioned DNA sequences, vectors, proteins, antibodies and/or compounds identified by the method of the invention in plant cell and tissue culture, plant breeding and/or agriculture.